

## Activity 1

### Sedimentary Rocks and the Geologic History of Your Community

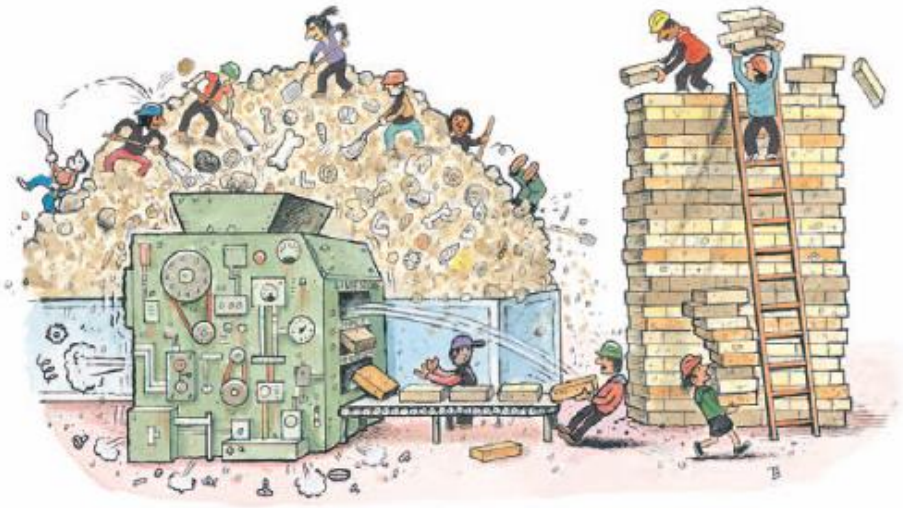
#### Think About It

Date \_\_\_\_\_

Page U4

Page # \_\_\_\_\_

- How does sediment  
(little pieces of rock)  
“turn into” sedimentary  
rock? (one big rock)



## WHAT DO YOU THINK?

## Activity 1

### Investigate Part A

Page U5

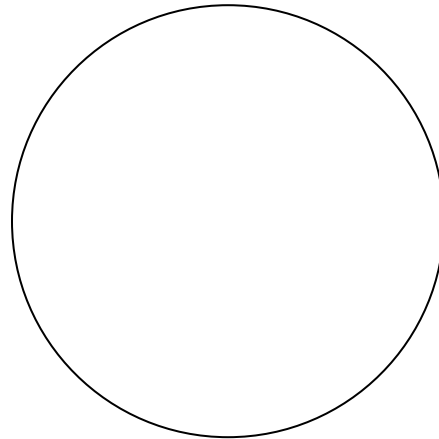
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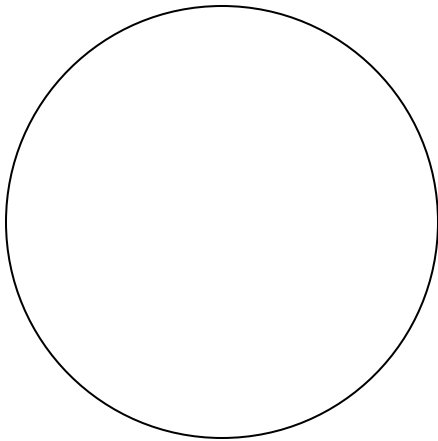
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6a. Draw a labeled diagram of each sedimentary rock.

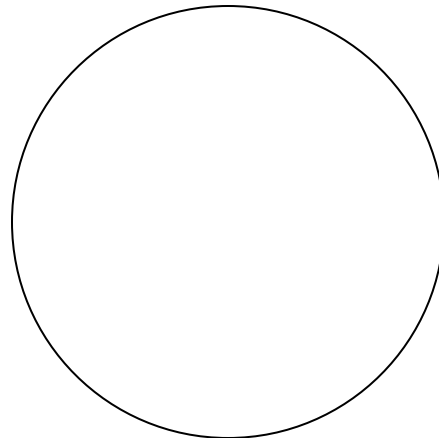
mudstone



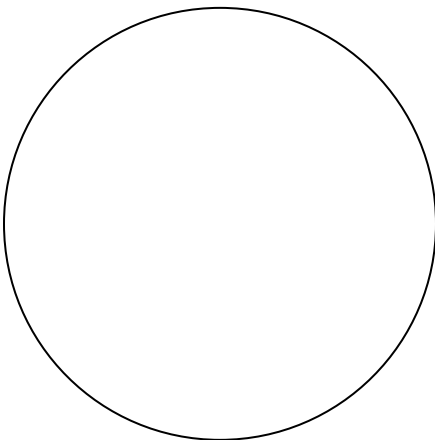
rock salt



sandstone



conglomerate



## Activity 1

### Investigate Part B

Page U6

Date

Page #

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1a. Make a data table.

<b>Rock</b>	<b>Description</b>	<b>Sedimentary Type</b>	<b>Name</b>
1			
2			
3			
4			
a			
c			
e			
h			
l			

## Activity 1 Sedimentary Rocks

### **Digging Deeper**

Pages U8-U12

Date

Page #

<http://www.brainpop.com/science/earthsystem/typesofrocks/>  
[/](#)

**Learning Objective:**     **In writing, SWBAT describe the processes of weathering and erosion and list causes of each using academic language in order to understand how sedimentary rocks form and change.**

### **Weathering**

a process that breaks solid rock into sediments

Causes of  
weathering

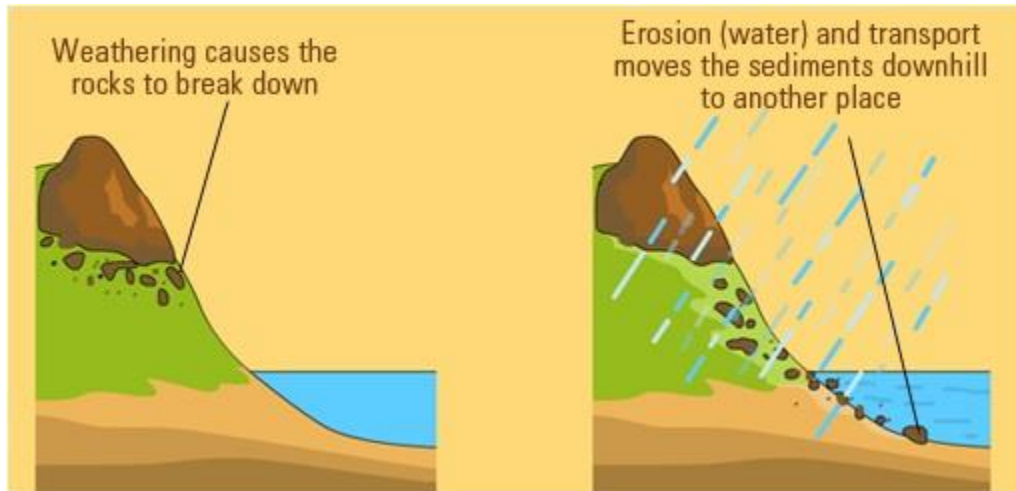
- heat
- water
- wind
- ice
- plant growth
- chemicals (acid rain)

[http://www.classzone.com/books/earth\\_science/terc/content/visualizations/es1305/es1305page01.cfm?chapter\\_no=visualization](http://www.classzone.com/books/earth_science/terc/content/visualizations/es1305/es1305page01.cfm?chapter_no=visualization)

<http://www.brainpop.com/science/weather/weathering/>

## Erosion

the movement of sediments to a new location



Causes of erosion

- water
- wind
- gravity
- glaciers

<http://www.brainpop.com/science/earthsystem/erosion/>

[http://www.classzone.com/books/earth\\_science/terc/content/visualizations/es1303/es1303page01.cfm?chapter\\_no=visualization](http://www.classzone.com/books/earth_science/terc/content/visualizations/es1303/es1303page01.cfm?chapter_no=visualization)

[http://www.classzone.com/books/earth\\_science/terc/content/visualizations/es0604/es0604page01.cfm?chapter\\_no=visualization](http://www.classzone.com/books/earth_science/terc/content/visualizations/es0604/es0604page01.cfm?chapter_no=visualization)

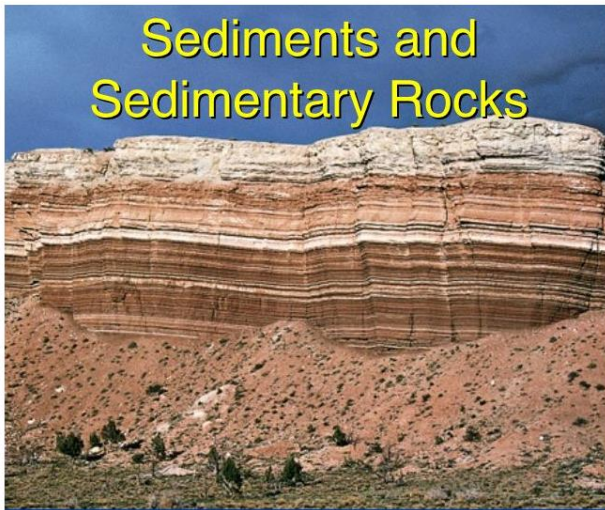
<http://www.learner.org/interactives/rockcycle/change3.html>

How sediments  
form

the processes of weathering and erosion break solid rock down into sediments and deposit them in new locations

## Sedimentary rock

a rock formed when sediments are deposited into layers



Classification

sedimentary rocks are classified by:

- their composition
- how they form

3 types of  
sedimentary rock

1. clastic sedimentary rock
2. chemical sedimentary rock
3. organic sedimentary rock



**Learning Objectives:** In writing, SWBAT describe how the three types of sedimentary rocks form and give examples of each type using academic language in order to understand their role in the rock cycle.

**Clastic sedimentary**

a sedimentary rock made up of rock pieces that can become compacted and cemented into solid rock

Examples of  
clastic sedimentary  
rocks

- mudstone
- claystone
- conglomerate
- sandstone
- siltstone
- shale



**Chemical  
sedimentary  
rock**

a sedimentary rock formed when dissolved minerals come out of water

Examples of  
chemical  
sedimentary rocks

- limestone
- rock salt
- gypsum
- dolomite



Limestone

the most common chemical  
sedimentary rock



Large areas of the central United  
States have limestone bedrock  
because oceans covered much of  
the country for millions of years

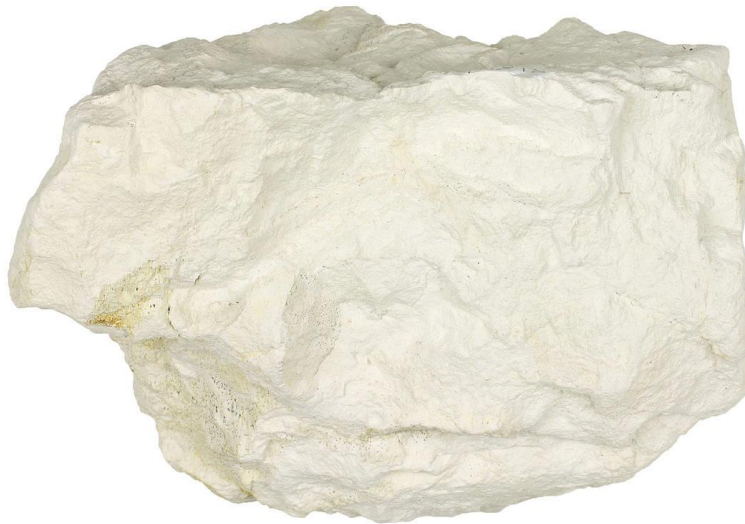


## **Organic sedimentary rock**

a sedimentary rock made mainly of the remains of organisms that are compacted together

Example of organic sedimentary rock

- coal
- chalk



How coal forms

plants in swamps with rich plant life die and are buried by the remains of later plants of later plants and sediments

Over time, the plant material is compressed so much by the weight of sediment from above that it is turned into solid rock

Peat

the first material to form, is not yet buried very deeply



Lignite

brown coal



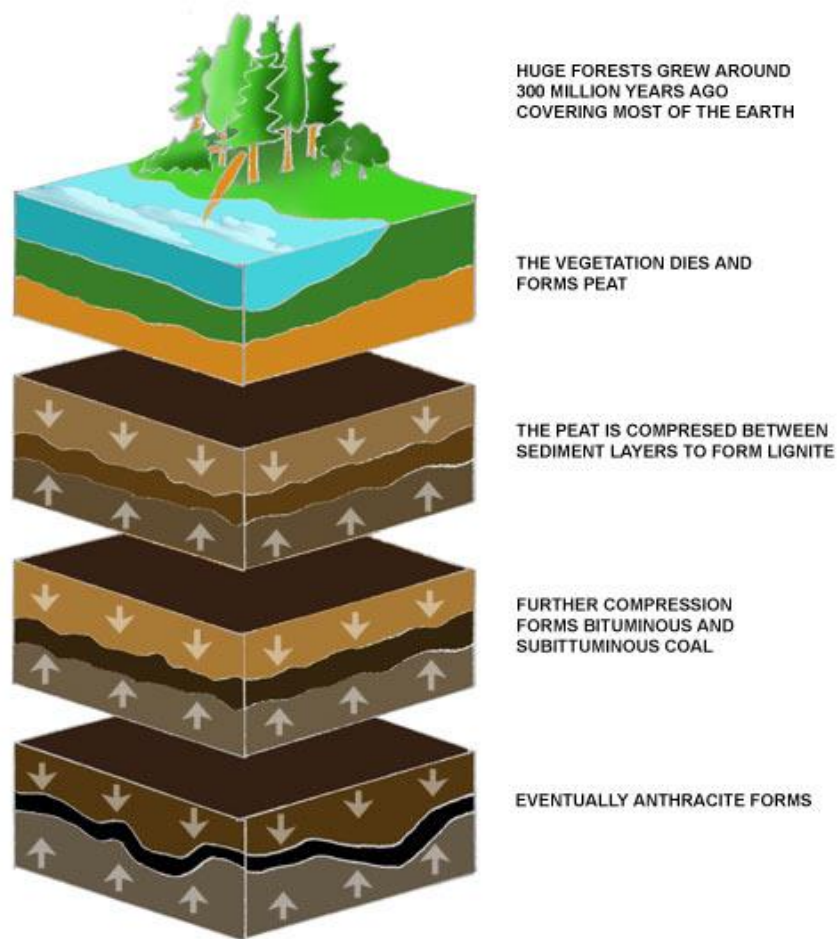
Bituminous coal

soft coal



Anthracite

hard coal

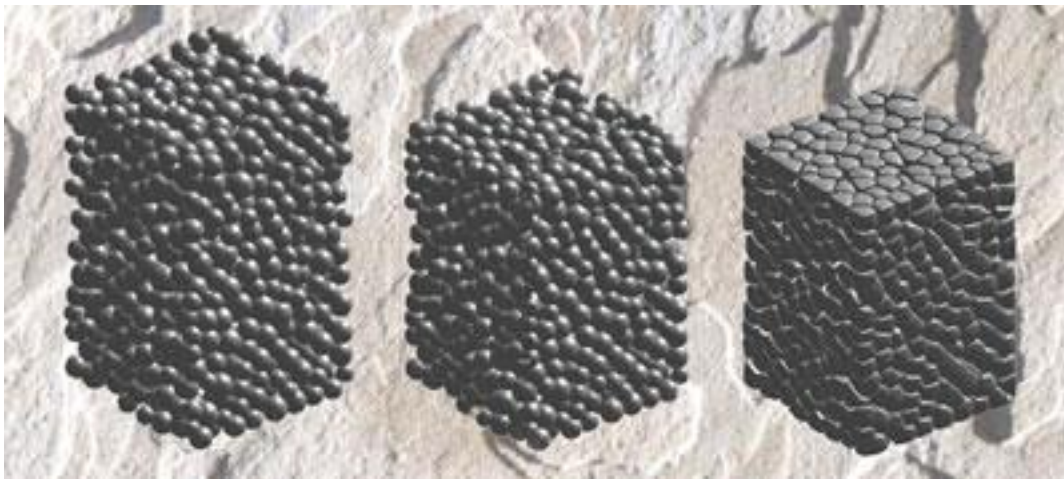


[http://www.hk-phy.org/energy/power/source\\_phy/flash/formation\\_e.html](http://www.hk-phy.org/energy/power/source_phy/flash/formation_e.html)

Coal	forms in tropical to subtropical climates
Ancient coal	found in Antarctica suggests the climate in Antarctica was once warm, or tropical

**Learning Objective:** In writing, SWBAT compare and contrast compaction and cementation using academic language in order to understand how sedimentary rocks form.

**Compaction** the process of sediments being compressed by the weight of the layers above them



<http://www.absorblearning.com/media/item.action?quick=1>  
36



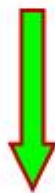
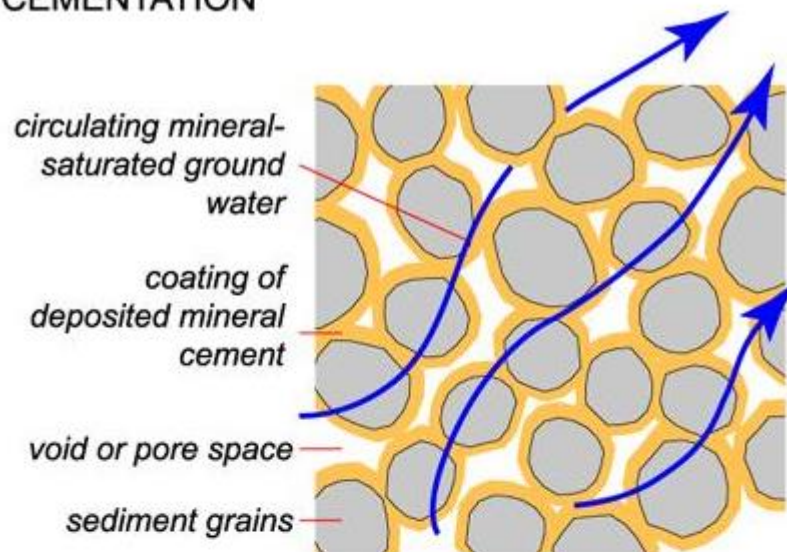
## Cementation

water carries dissolved minerals through the spaces between sediments and cements them together

Sediments to rock

the processes of compaction and cementation change sediments to solid sedimentary rock

### CEMENTATION





[http://www.classzone.com/books/earth\\_science/terc/content/visualizations/es0605/es0605page01.cfm?chapter\\_no=visualization](http://www.classzone.com/books/earth_science/terc/content/visualizations/es0605/es0605page01.cfm?chapter_no=visualization)

<http://www.learner.org/interactives/rockcycle/change3.html>

<http://www.geolsoc.org.uk/ks3/gsl/education/resources/rockcycle/page3559.html>

## Activity 1

### Check Your Understanding

Page U12

Date

Page #

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1. Explain how the three main types of sedimentary rock form.

*Clastic sedimentary rock forms from \_\_\_\_\_. Chemical sedimentary rock forms when \_\_\_\_\_. Organic sedimentary rock forms when \_\_\_\_\_.*

2. What does the discovery of ancient coal in Antarctica suggest about the past climate of that area?

*The discovery of ancient coal in Antarctica suggests the climate was once \_\_\_\_\_.*

3. Create a Venn diagram to compare and contrast the processes of weathering and erosion.